Mobilizing DOD RDT&E to Meet the Navy's Range Sustainment Challenge

NAVFAC
Naval Facilities Engineering Command

Pollution Abatement Ashore Program

Leadership…
Innovation…
Performance

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Briefing Outline

- Pollution Abatement Ashore Program (Project Y0817)
- Project Initiation Process
- Fate & Effects of Underwater UXO Project
- Long-Term Disposition of Seafloor Cables Project
- Range Sustainability Initial Decision Report (IDR)
- Conclusion

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Program Category and Scope

DOD RDT&E Categories

- 6.1 Basic Research
- 6.2 Exploratory Development
- 6.3 Risk Reduction
- ✓ **6.4 Demonstration and Validation**

Navy 6.4 Environmental RDT&E Programs

- Shipboard Waste Management - NAVSEA S0401
- Aviation Pollution Prevention - NAVAIR W2210
- ✓ **Pollution Abatement Ashore - NAVFAC Y0817**

The 4 Environmental Capabilities Being Pursued by Project Y0817

- Platform Operation and Force Projection Unencumbered by Environmental Constraints

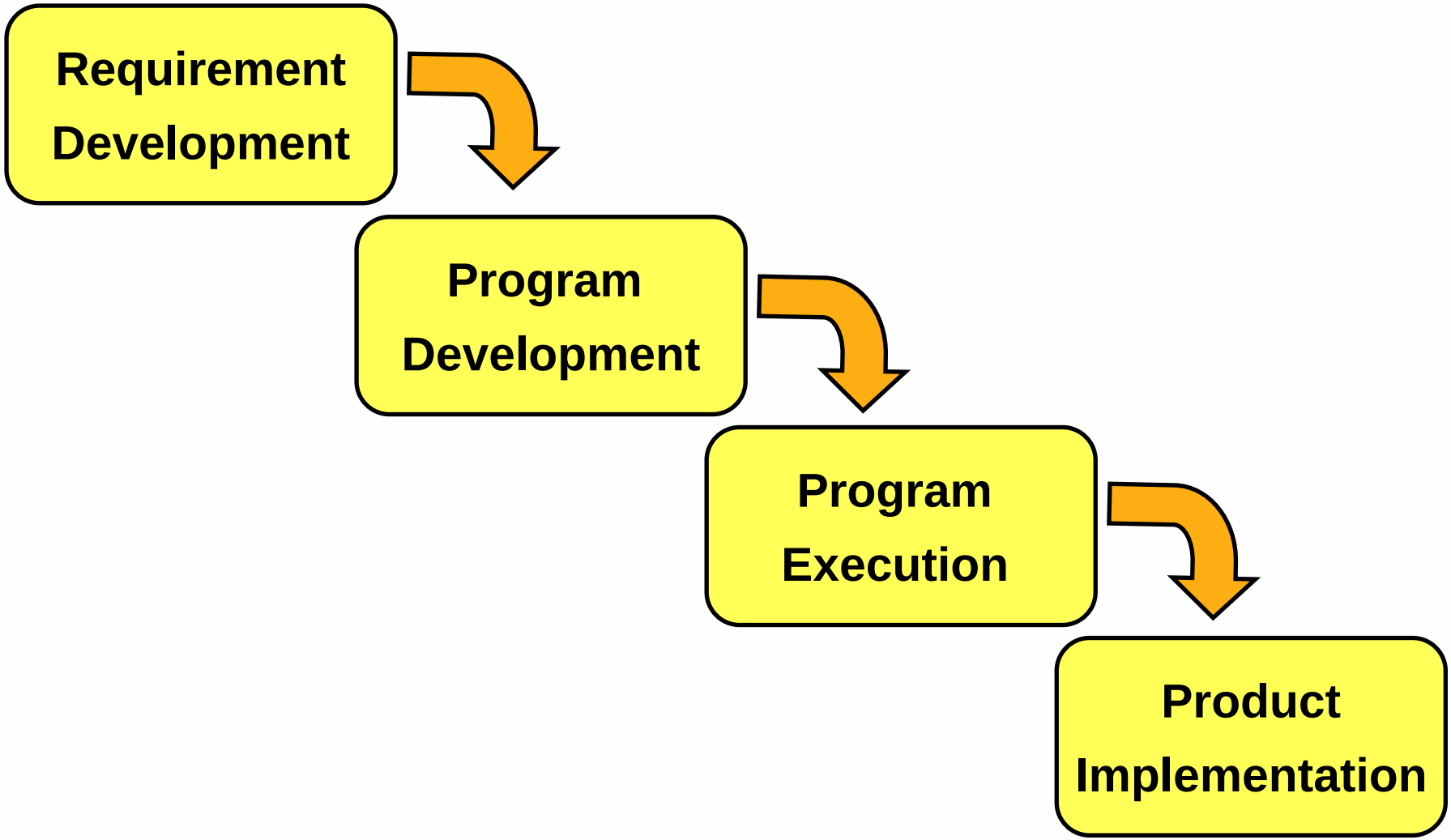
✓ **Platform Repair & Maintenance with Minimal Environmental Footprint**

✓ **Maximize Navy Training Range Use within Environmental Constraints**

✓ **Support of Base Operations within Environmental Constraints**

✓ **Cost Effective Management of Environmental Regulatory Requirements**

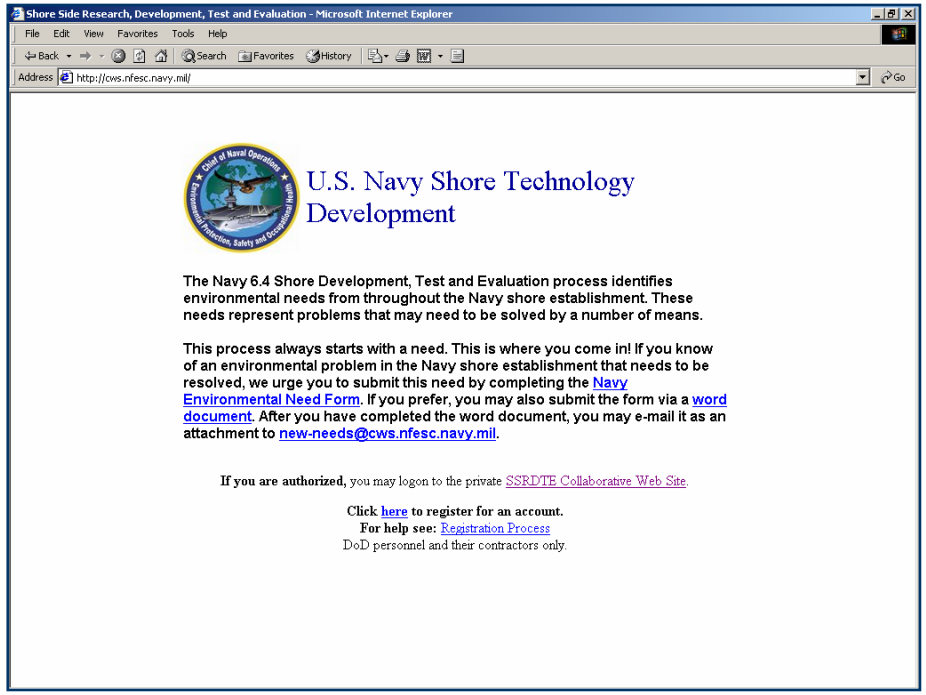
The 4 Phases of Stakeholder Participation



Y0817 Program Websites

Website for Public Information And Program Management

http://p2ashore.nfesc.navy.mil



Collaborative Website for Stakeholder Participation

http://cws.nfesc.navy.mil

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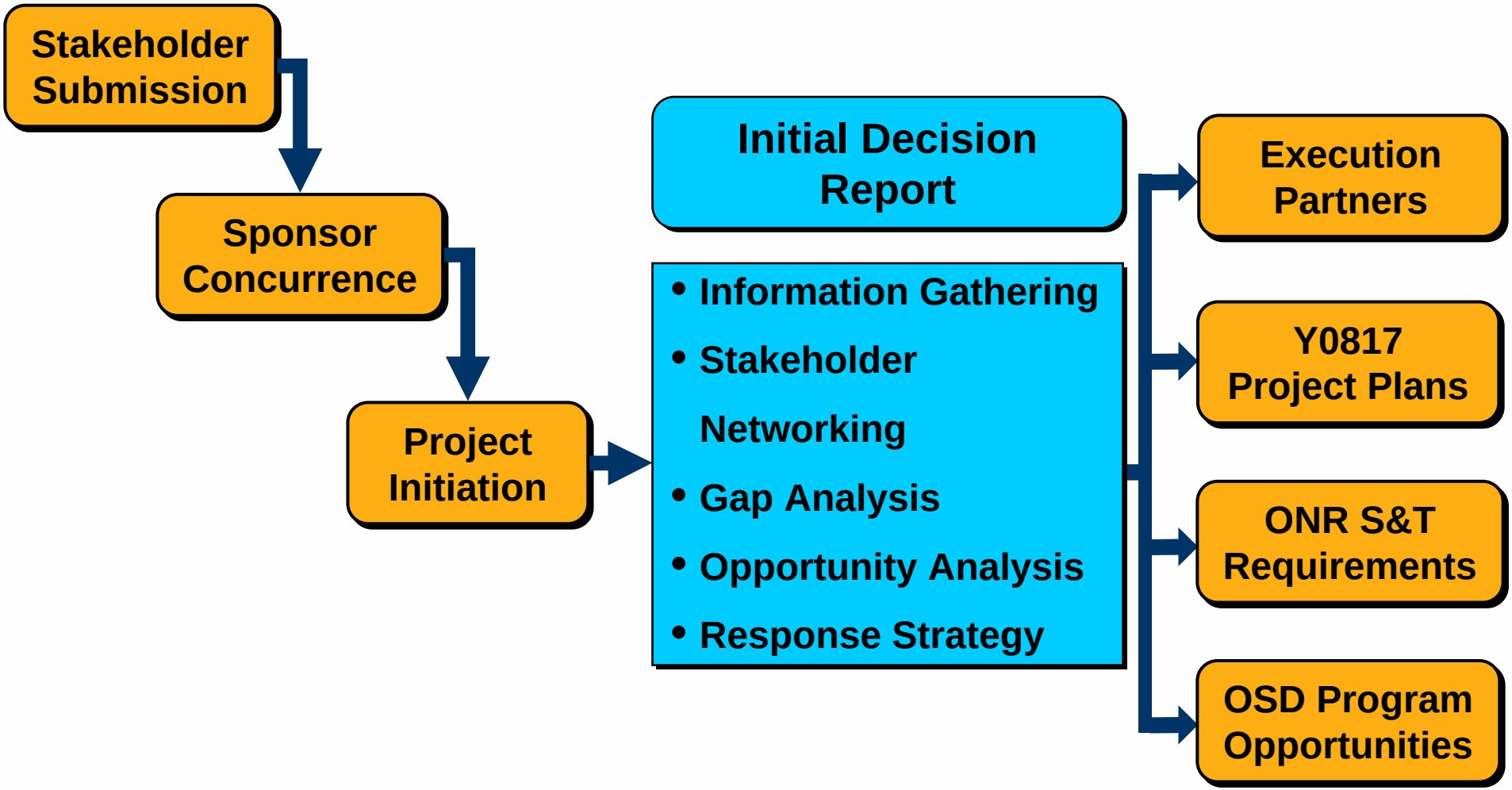
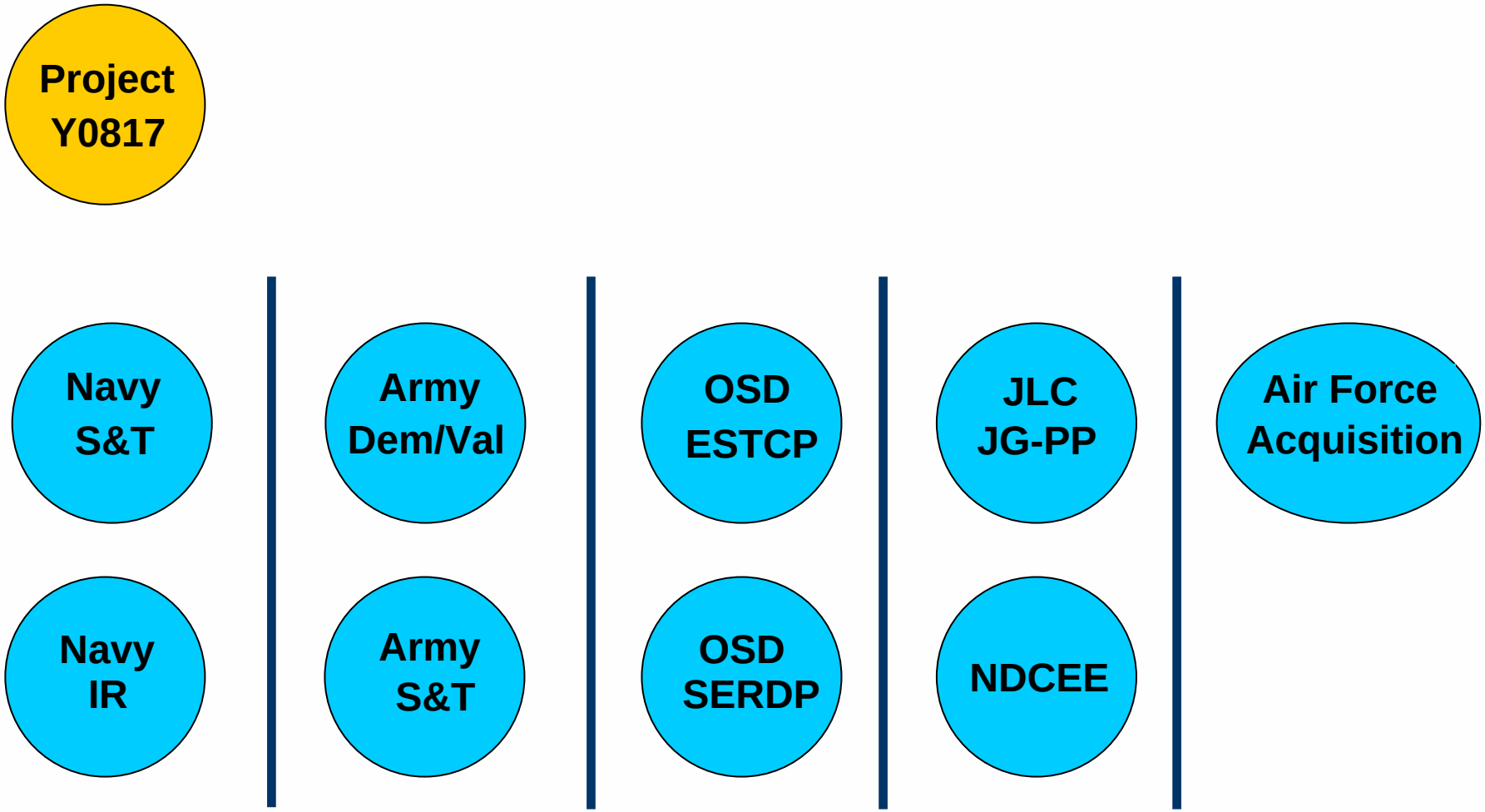
Project Initiation Process



Some Potential Partners



The Range Environmental Capability

- Platform Operation and Force Projection Unencumbered by Environmental Constraints

✓ **Platform Repair & Maintenance with Minimal Environmental Footprint**

✓ **Maximize Navy Training Range Use within Environmental Constraints**

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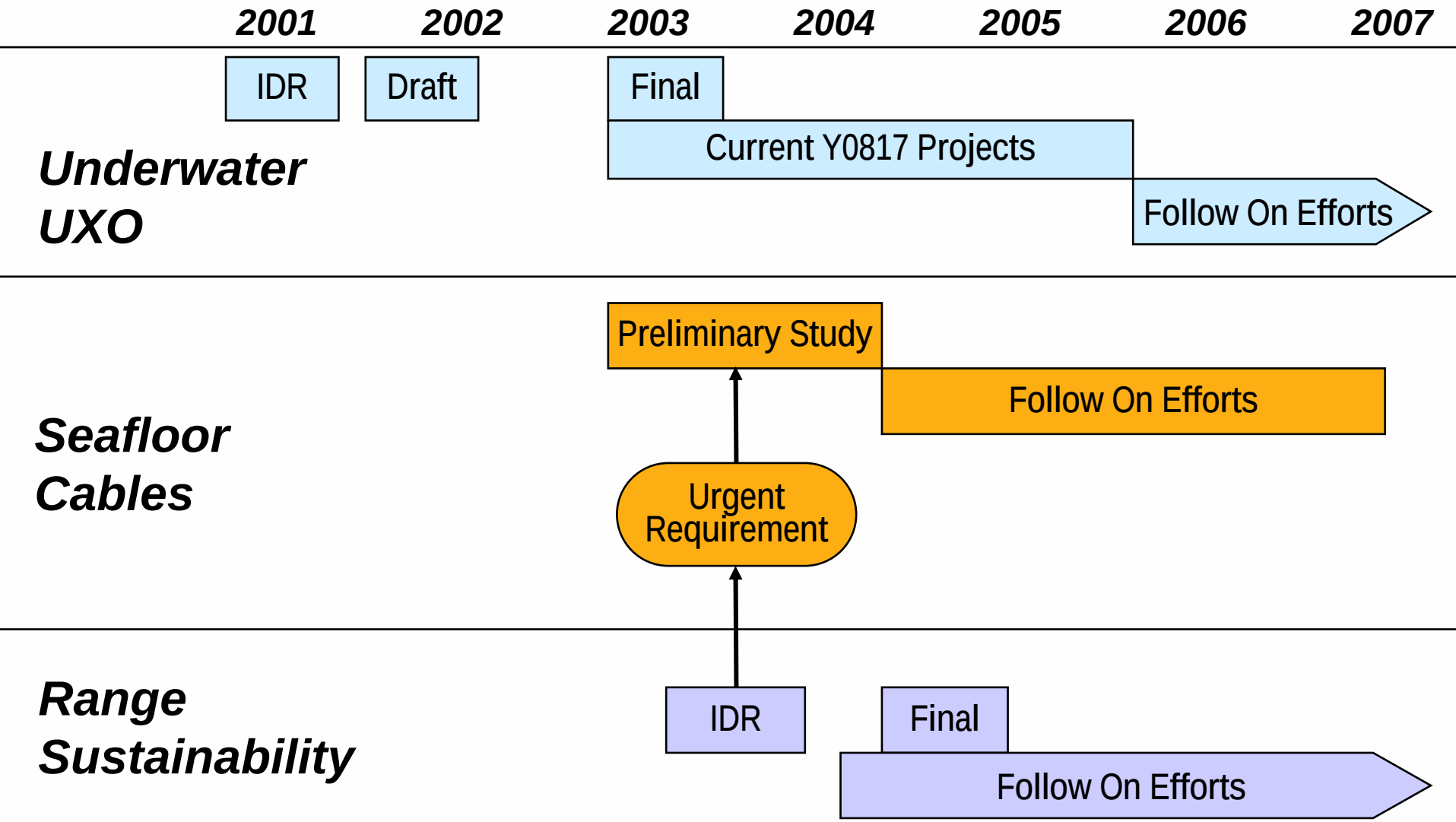
Current Projects



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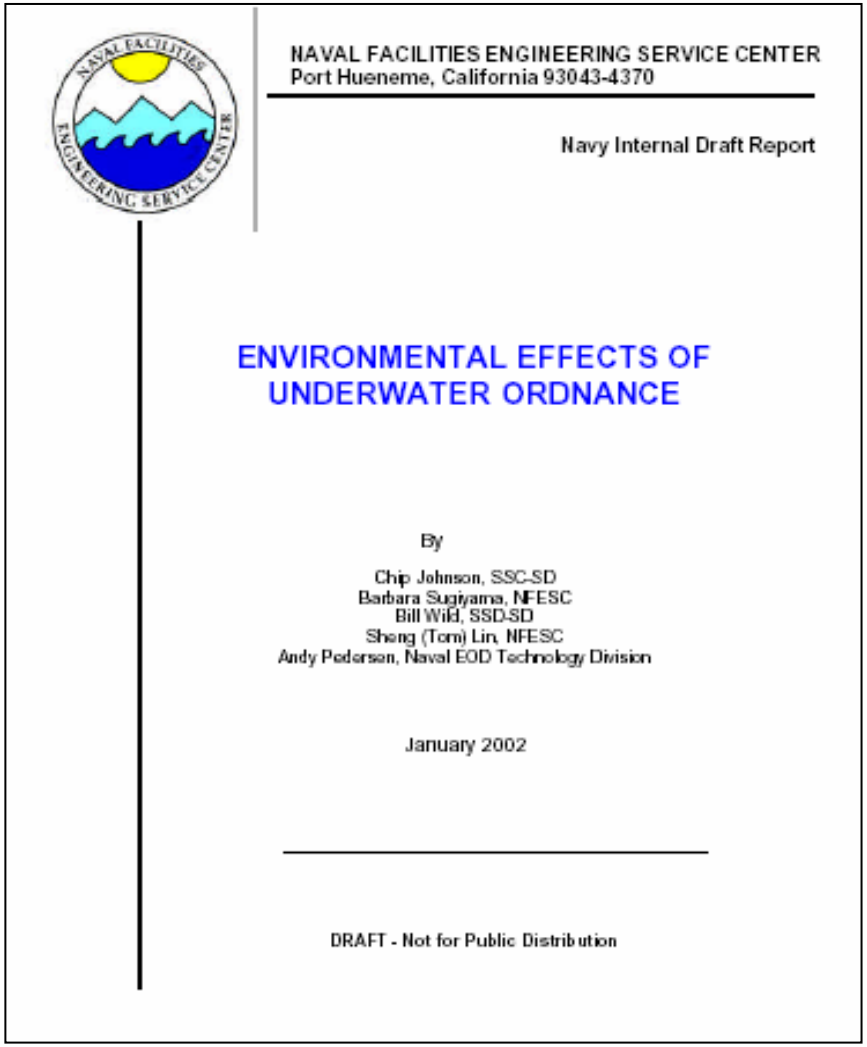
Project Objective

Provide the Navy with a scientific basis for making sound defendable decisions concerning the disposition of underwater UXO that fully considers the operational, safety and environmental factors of the alternatives.

Environmental Effects of Underwater Ordnance IDR



NAVAL FACILITIES ENGINEERING SERVICE CENTER
Port Hueneme, California 93043-4370

Navy Internal Draft Report

ENVIRONMENTAL EFFECTS OF UNDERWATER ORDNANCE

By

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January 2002

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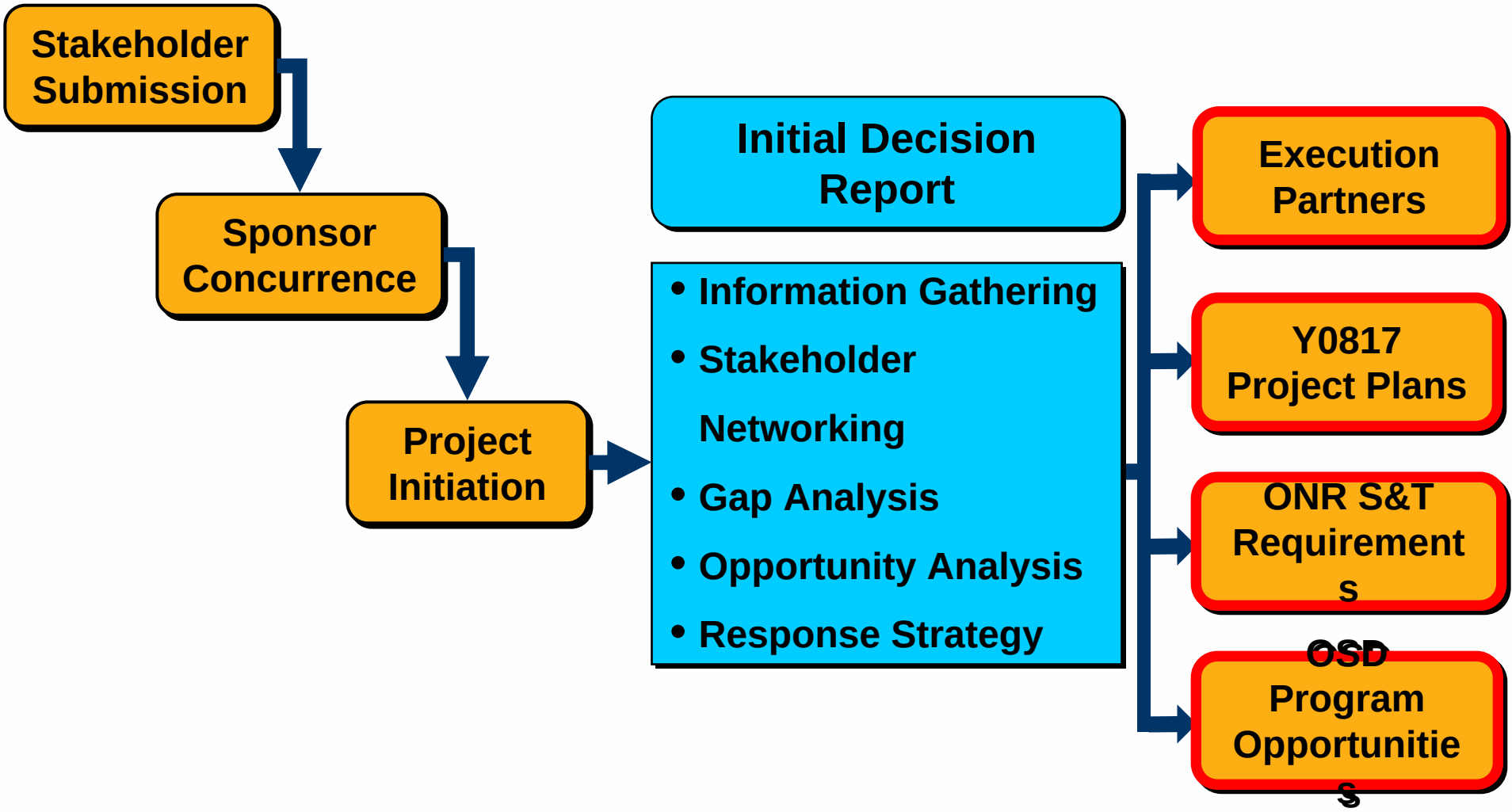
Fate & Effects of Underwater UXO



Execution Partners

- Naval Facilities Engineering Service Center (NFESC)
- SPAWAR Systems Center San Diego (SSC-SD)
- Army Engineer Research & Development Center (ERDC)
- Scott A. Jenkins Consulting (Scripps)
- Sound & Sea Technology, Inc.

Current Y0817 Projects

- Munitions Constituents in Marine Matrices Degradation
- Multi-species Marine Sediment Toxicity
- Casing Corrosion
- Mobility and Burial
- Feasibility of Adapting An Existing Risk Assessment Tool

ONR S&T Requirements

6.1 Task Objectives

- Elucidate microbial mechanisms for degradation of MCE in estuarine ecosystem
- Identify microorganisms that degrade MC
- Develop marine microbial biosensors for TNT
- Examine tolerance of seaweeds to MC, and initiate genetic engineering studies to develop TNT sensing and degrading seaweeds

OSD Program Opportunities

Current SERDP SON

- CPSON-05-01 Characterization and Fate of the Source Term of Energetic Compounds in Aquatic Environments

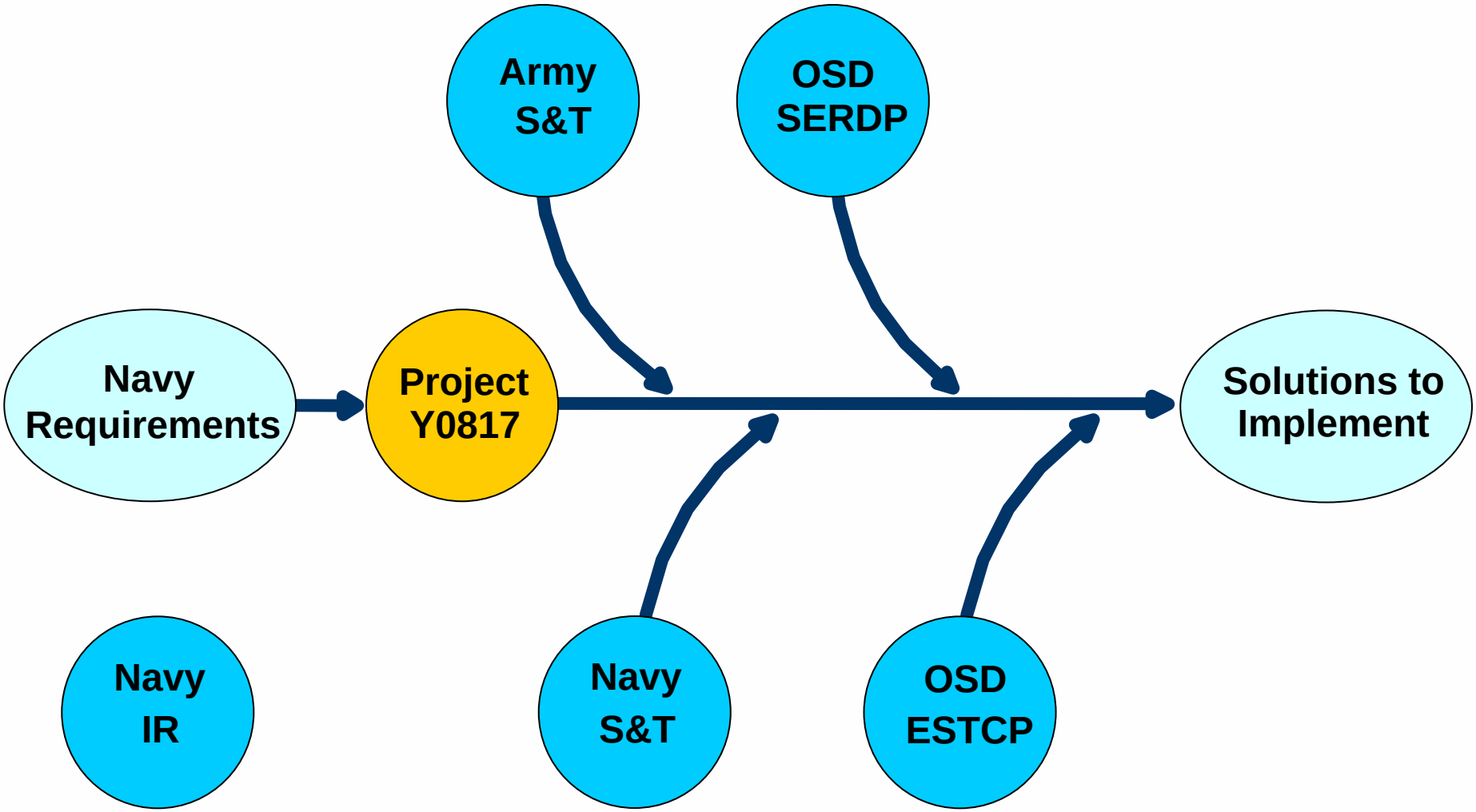
Current ESTCP Project Proposal

- Dem/Val Modified Vortex Model to Predict Mobility and Burial of Underwater Ordnance (waiting for approval)

Future ESTCP Project Proposal

- Field Screening Techniques for MC in Marine Environment
- Ecological Risk Assessment of an Underwater UXO site

The Underwater UXO Partnering Sequence



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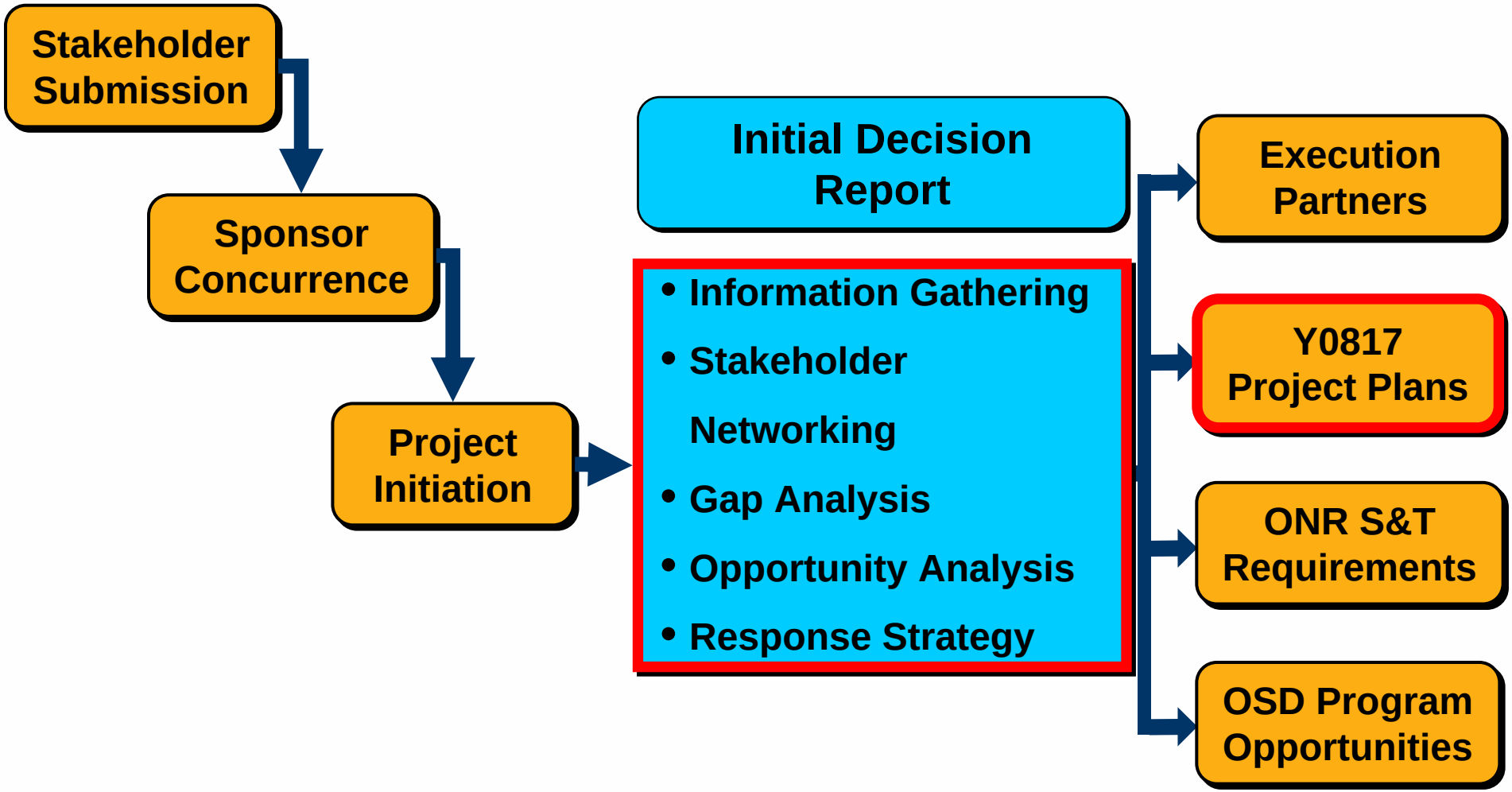
Project Objective

Provide the Navy with a scientific basis for making sound defendable decisions concerning the disposition of out-of-service seafloor cables that fully considers the operational, safety and environmental factors of both the recovery and keep-in-place alternatives.

Long-Term Disposition of Seafloor Cables



The Effort

- **A one-year study has been initiated that will:**
  - Investigate the material components used in Navy seafloor cables. This will include looking at past, present, and future Navy seafloor cable designs.
  - Assess these materials for their potential to adversely impact the marine environment.
  - Investigate Navy and commercial practices for seafloor cable installation, removals, and justification for abandoning in-place after their operational lifetime.
  - While this effort is directed at Navy interests and requirements, the experience and data available from the commercial telecommunications industry is being included.

The Final Product

- **The final product will be a preliminary version of a handbook that will be delivered in December 2004.**
  - It will be an electronic (CD-ROM or Web-based) hypertext linked document with user-friendly access that is searchable for quick access to specific information
  - It is intended as a jump start to give an interim capability, that will be completed by future efforts being developed as part of the Range Sustainability Initial Decision Report.

Assistance Requested

We need your help with specific information in the following areas:

- Case histories of environmental issues and resolutions, which could bear on the subject of this study
- Case histories of recoveries/abandonment in place
  - (e.g. AFWTF Saint Croix cable landings (LANTDIV))
- Potential and known marine resources impacts from installation, removal, or being kept in place

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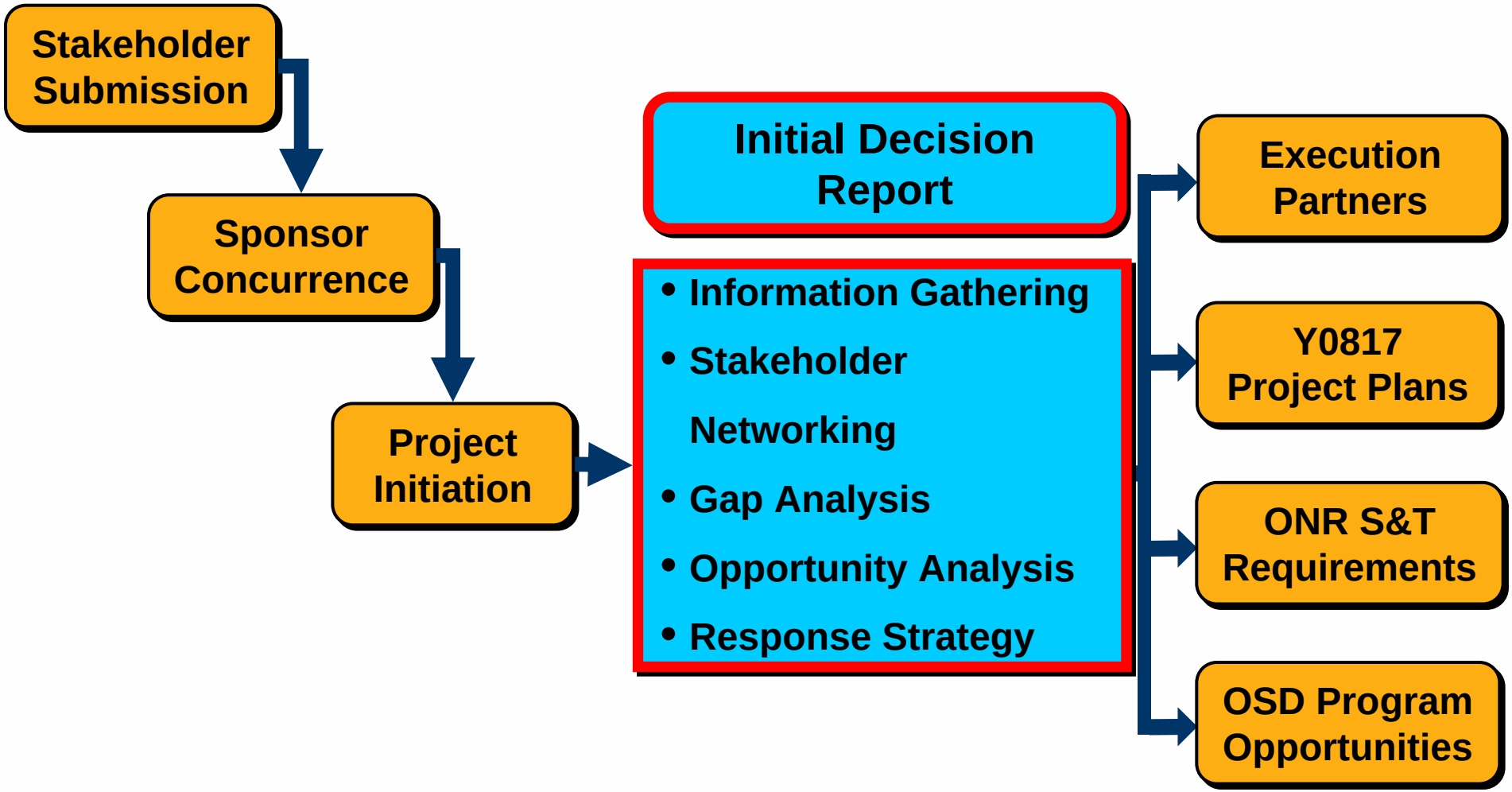
Project Objective

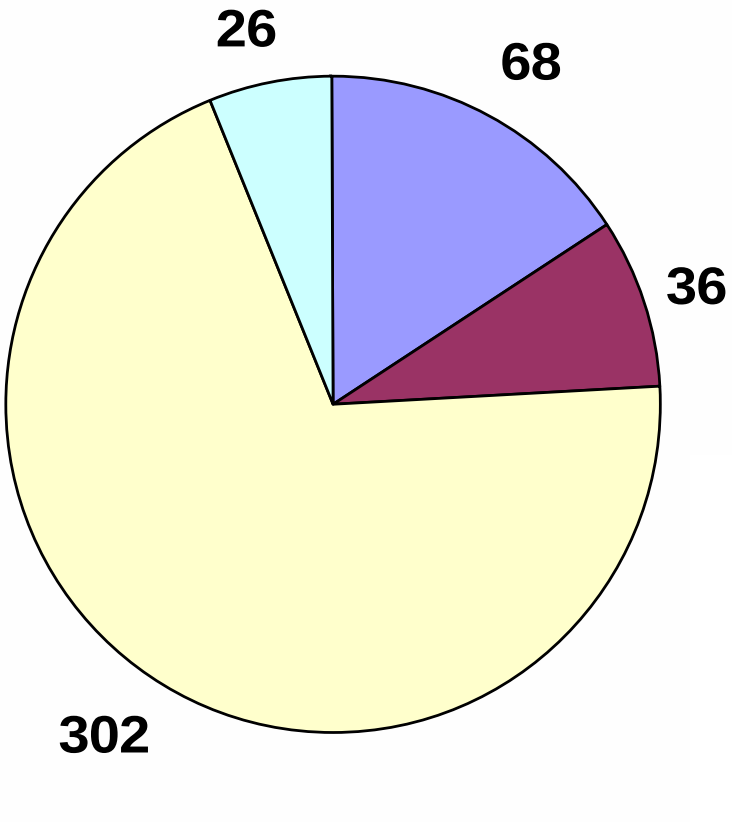
Provide the Navy with additional knowledge and methods to effectively support realistic training exercises and test events on its ranges while also fulfilling applicable environmental planning and compliance requirements.

Range Sustainability IDR

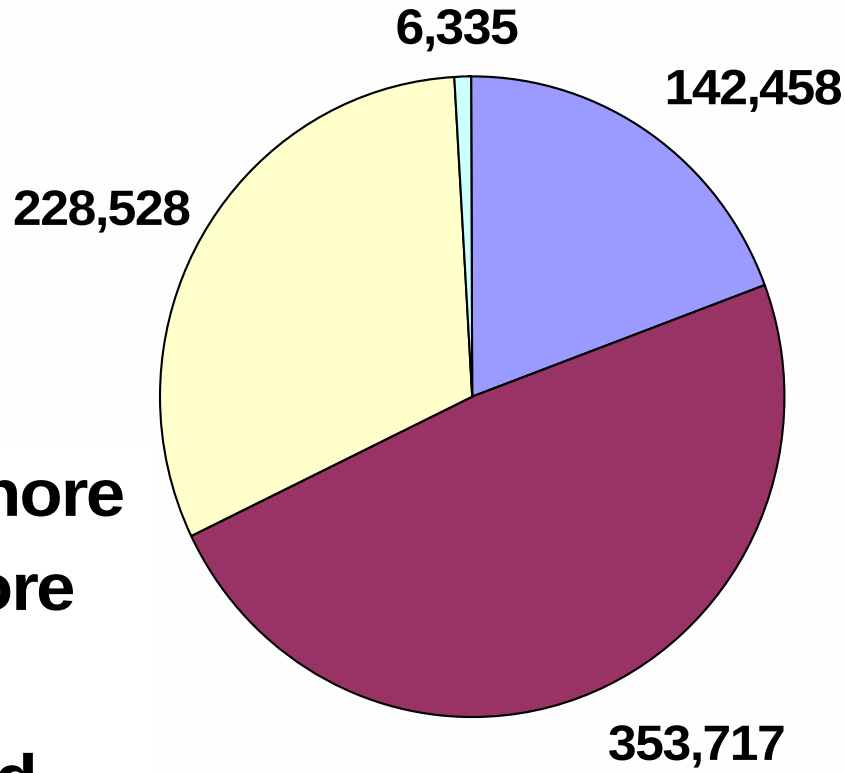


Information Gathering: Range Distribution & Acreage

Impact Area by Location

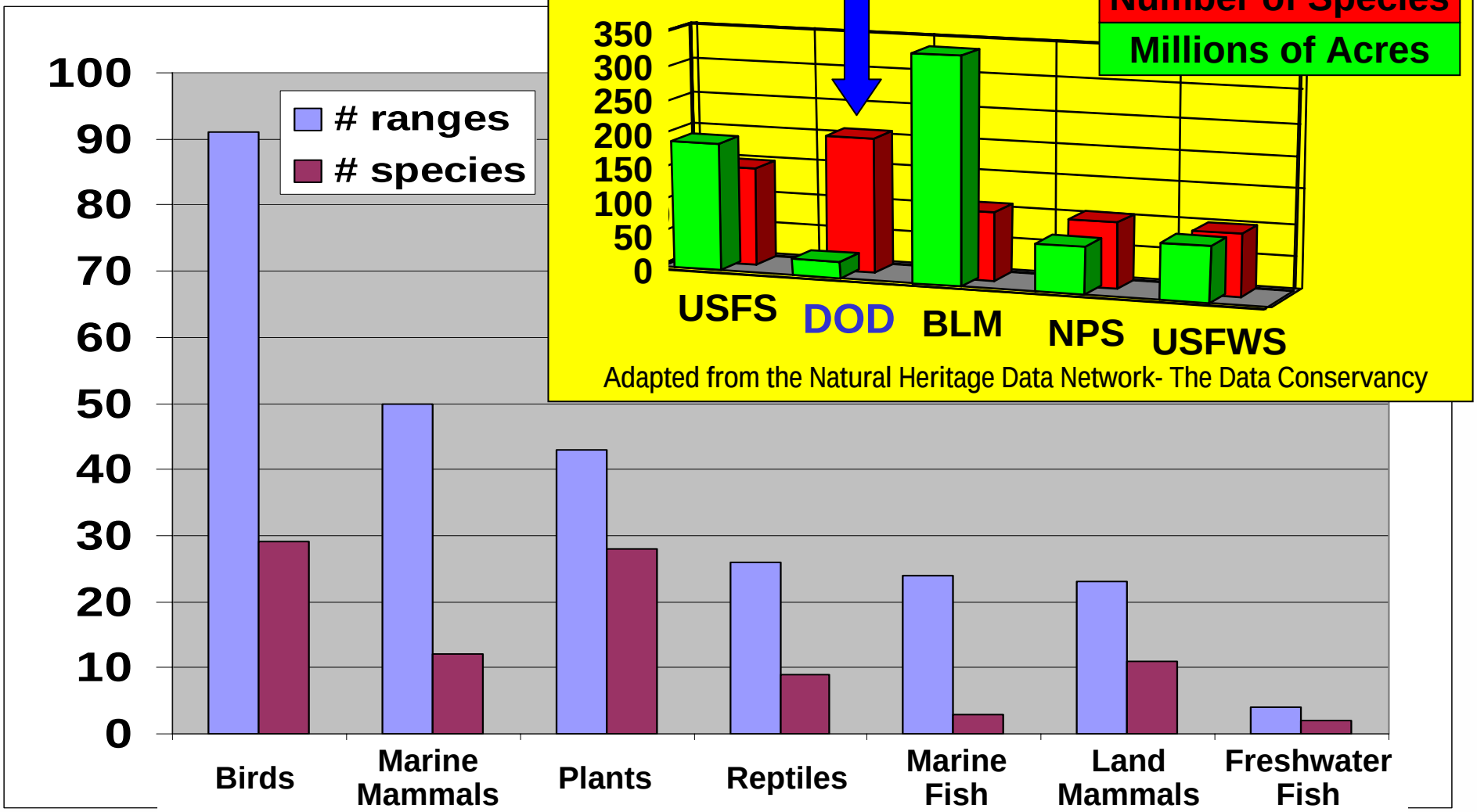


Impact Area by Acreage



Navy Ranges Affected by Endangered Species

(of 192 Ranges with Known or Potential Endangered Species)



Stakeholder Networking

To identify user needs, we coordinated with:

- Range Managers
- Ordnance Environmental Support Office (OESO)
- Range Sustainability Group (RSG)
- Range Sustainability Environmental Program Assessment (RSEPA) Work Group
- SERDP Range Sustainability Work Group (RSWG)
- Natural Resource Managers

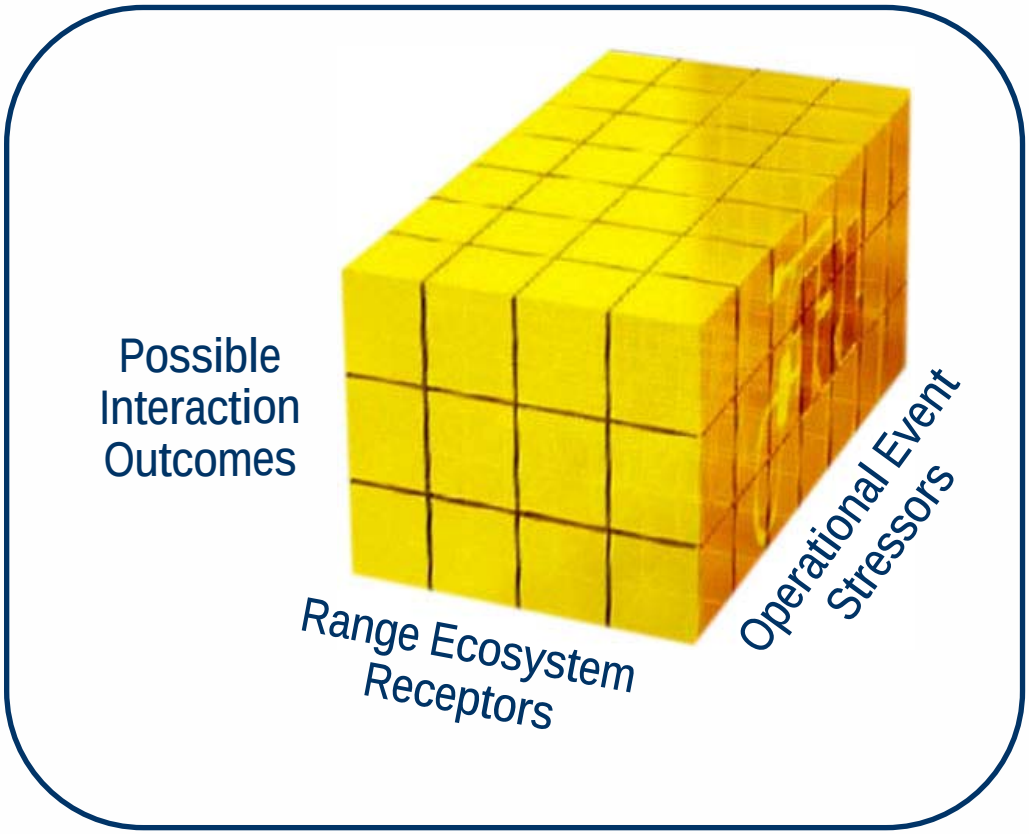
Results to Date of Gap Analysis

- Maintenance issues for invasive species control (improved equipment reduces environmental impacts)
- Accounting for ordnance used on range
- Marine mammal R&D in open ocean
- How to assess effectiveness of practices (metrics)
- Fate & transport predictive model (OTS) that will provide a concentration for comparison to screening values for land, groundwater and surface water
- Carrying capacity in various ecosystems
- Seafloor cable disposition

Opportunity Analysis

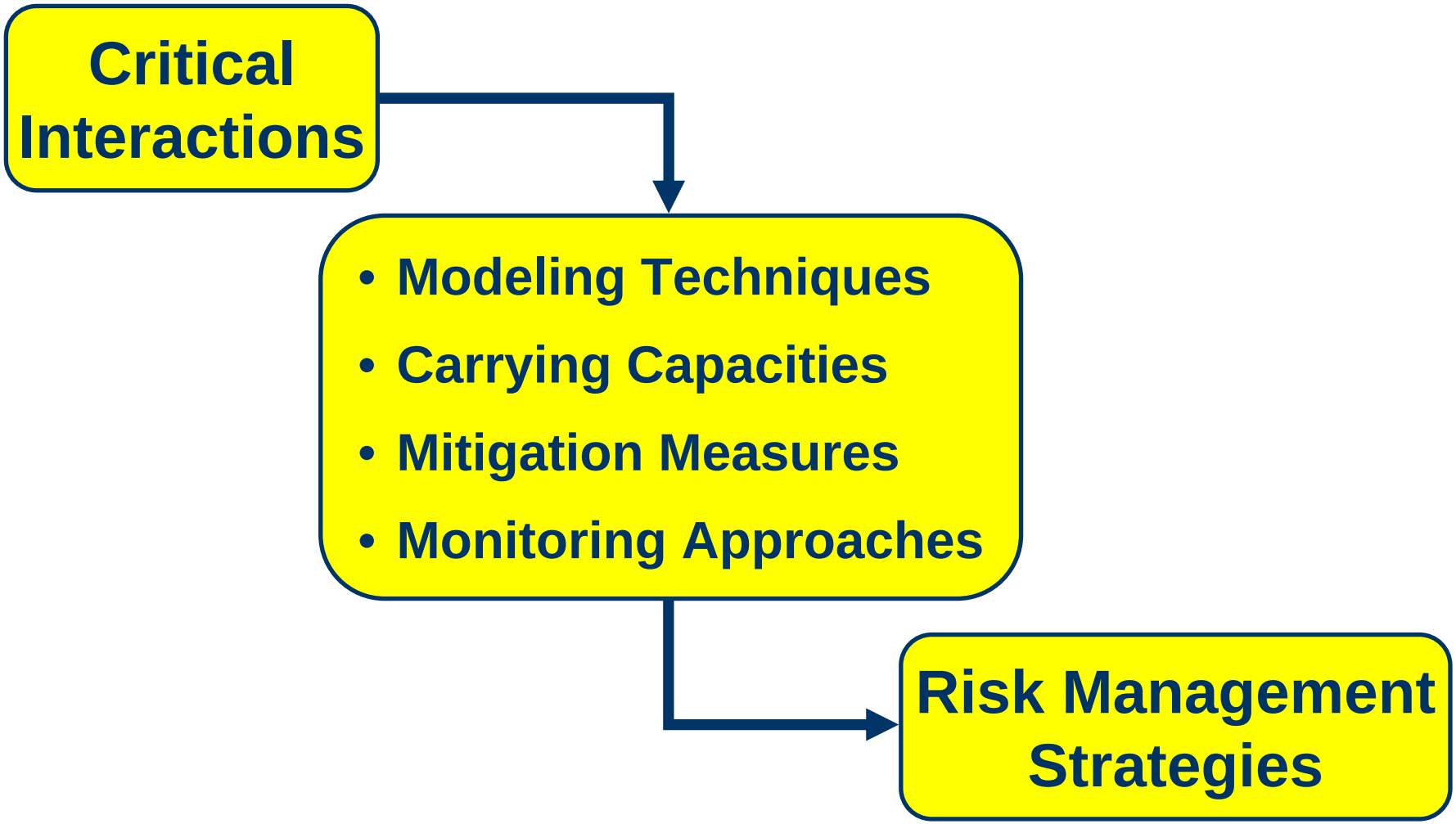
Range Issue	Possible Opportunity	Possible Navy Gap
Protected Marine Resources	SERDP $1.4M	Coral Reefs? Sea Grasses? Other Habitat Issues?
Endangered Species	SERDP (6) $8.4M	Red Cockaded Woodpecker Other?
UXO/Munitions Components	SERDP/ESTCP (79) >$50.6M	Range Residue/Scrap
Air Pollution	SERDP/ESTCP (15) $15.3M	Unknown?
Noise Pollution	SERDP (1) $0.8M	Unknown?
Urban Encroachment	SERDP (3) $1.9M	Unknown?
Range Management	SERDP (7) $7.1M	Invasive Species, Only 1 Case Voiced, Any More?
Cultural Resources	SERDP (3) $1.6M	Unknown?

Response Strategy Framework



Critical Interactions

Response Framework Continued



Natural Resources Input Essential to the Success of this IDR

- **User community input is vital to the success of future Navy RDT&E efforts to support range sustainability.**
- **To avoid any deficiencies, we need to know what issues you are facing now, and what issues you expect to encounter in the next 10 years?**
- **If you think new knowledge, methods or technologies can help to eliminate, or minimize these impacts, we need your input now!**
- **Contact Leslie Karr, 805-982-1618, or leslie.karr@navy.mil to discuss.**

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You Can Make a Difference!

Contacts

Program Contacts

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